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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,094	07/11/2001	Shi-Yue Qiu	P 0273746 PAT-002	8093

30827 7590 06/02/2005

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EXAMINER

STEVENS, THOMAS H

ART UNIT PAPER NUMBER

2123

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,094

Applicant(s)

QIU, SHI-YUE

Examiner

Thomas H. Stevens

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-24 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 7/11/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/3/05
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-23 were examined.

Response to Applicant's Arguments

Oath/Declaration

2. Applicant is thanked for addressing this issue. Examiner acknowledges corrected oath/declaration; objection is withdrawn.

U.S.C 101 (Provisional Double Patenting)

3. Applicant is thanked for addressing this issue. In response to abandoned co-pending application (09/897,804), rejection is withdrawn.

Claim Objections

4. Applicant is thanked for addressing this issue. Based on the response by applicants, objections are withdrawn.

102(b)/103(a)

5. Applicant is thanked for addressing this issue. Based on applicant's amendment, all rejections are withdrawn; however, in an update search, new art was discovered by the examiner.

Section II: Final Rejection (2nd Office Action)

Claim Interpretation

6. Office personnel are to give claims their "**broadest reasonable interpretation**" in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d

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1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See *also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow") The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process. Examiner interprets "sliding windows" (specification, pg.17, lines 6-9) as an extended application of a plurality of web browser windows such that users have the ability to witness the same or multiple events in real-time.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

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Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1-15, 17-22, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Reed (U.S. Patent 6,850,988 (2005)) teaches a system and method for dynamically evaluating an electronic commerce business model through click stream analysis (abstract).

Claim 1. A system for early warning in an e-service management system, comprising: a statistical learning mechanism for performing statistical learning based on a plurality of data values of a variable to generate a statistical model (column 2, lines 15-19) characterizing behavior of the variable; an early warning (part of verification process-column 7, lines 31-41) mechanism for generating an early warning (part of verification process-column 7, lines 31-41) of threshold (column 12, lines 19-23) violation of the variable with respect to a threshold (column 13, lines 1-7) by predicting, (column 9, lines 47-54) based on a plurality of residuals corresponding to different time reference points (column 8, lines 25-30) in the future based on the statistical model (column 2, lines 15-19); a future time by which the values of the variable exceeds the threshold (column 13, lines 1-7); and an operational mechanism for detecting abnormal behavior of the

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variable based on both the statistical model (column 2, lines 15-19) and the early warming.

Claim 2. The system according to claim 1, (column 2, lines 15-19; column 9, lines 47-54; column 8, lines 25-30; column 13, lines 1-7) wherein the statistical learning mechanism comprises: an offline normal behavior modeling mechanism for modeling the regular behavior of the variable based on the plurality of values of the variable collected offline over a period of time (figure 6 with column 8, lines 23-45); and an online behavior modeling mechanism for modeling the dynamic behavior of the variable based on a plurality of values of the variable collected online during the operations performed by the operational mechanism (figure 6 with column 8, lines 23-45; columns 8-9, lines 58-67 and 1-8, respectively).

Claim 3. A method for early warning (part of verification process-column 7, lines 31-41) in an e-service management system (title and abstract), comprising: modeling the behavior of a variable based on a plurality of data values of the variable collected over a period of time said modeling being performed based on the statistical properties (column 2, lines 15-19) of the data values of the variable to generate a behavior model for the variable, the behavior model being represented using a plurality of model parameters (column 8, lines 25-30); generating an early warning (part of verification process-column 7, lines 31-41) for a threshold (column 12, lines 19-23) violation of the

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variable with respect to a threshold (column 12, lines 19-23) based on a plurality of data values (column 8, lines 25-45) of the variable collected online and the behavior model, the generating an early warning (part of verification process-column 7, lines 31-41) including computing a plurality of residuals corresponding to different time reference points in the future based on the model parameters (column 8, lines 32-45); and detecting abnormal behavior (example- column 7, lines 46-49) of the variable according to the plurality of data values of the variable collected online and the early warning (part of verification process-column 7, lines 31-41).

Claim 4. The method according to claim 3, (title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein the modeling comprises: establishing, by an offline normal behavior modeling mechanism, a first statistical model (column 2, lines 15-19) that characterizes the regular behavior of the variable based on a first set of values (column 12, lines 52-57) of the variable collected offline over a period of time; and establishing a second statistical model (column 2, lines 15-19) (column 2, lines 15-19) that characterizes the dynamic behavior of the variable based on a second set of values of said variable collected online (column 12, lines 45-57), said first and said second statistical model (column 2, lines 15-19) comprising said behavior model.

Claim 5. The method according to claim 3, (title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein further

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includes: deriving the variance of the plurality of residuals, predicted by said predicting; estimating the probabilities for threshold (column 12, lines 19-23) violation of the variable with respect to said threshold (column 12, lines 19-23) at the corresponding different time reference points in the future; and issuing an early warning (part of verification process-column 7, lines 31-41) for any of the time reference points at which the probability for threshold (column 12, lines 19-23) violation of the variable exceeds a pre-determined value.

Claim 6. The method according to claim 5, (title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein the estimating the probabilities comprises: deriving a residual threshold (column 12, lines 19-23) corresponding to the residual of the variable; and calculating the probabilities for threshold (column 12, lines 19-23) violation of the residual with respect to the residual threshold (column 12, lines 19-23) at the corresponding different time reference points in the future.

Claim 7. A computer-readable medium (column 1, lines 24-25) encoded with a program for early warning (part of verification process-column 7, lines 31-41) in an e-service management system, (column 2, lines 53-55) the program comprising: modeling the behavior of a variable based on a plurality of data values of the variable collected over a period of time, said modeling being performed based on the statistical properties (column 2, lines 10-20) of the data values of the variable to generate a behavior model

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for the variable, the behavior model being represented using a plurality of model parameters; generating an early warning (part of verification process-column 7, lines 31-41) for a threshold (column 12, lines 19-23) violation of the variable with respect to a threshold (column 12, lines 19-23) based on a plurality of data values of the variable collected online and the behavior model, the generating an early warning (part of verification process-column 7, lines 31-41) including computing a plurality of residuals corresponding to different time reference points in the future based on the model parameters; and detecting abnormal behavior (example- column 7, lines 46-49) of the variable according to the plurality of data values of the variable collected online and the early warning (part of verification process-column 7, lines 31-41).

Claim 8. The medium according to claim 7, (column 1, lines 24-25; part of verification process-column 7, lines 31-41; column 12, lines 19-23) wherein the modeling comprises: establishing, by an offline normal behavior modeling mechanism, a first statistical model (column 2, lines 15-19) that characterizes the regular behavior of the variable based on a first set of values of the variable collected offline over a period of time; and establishing a second statistical model (column 2, lines 15-19) that characterizes the dynamic behavior of the variable based on a second set of values of said variable collected online, said first and said second statistical model (column 2, lines 15-19) comprising said behavior model.

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Claim 9. The medium according to claim 7, (column 1, lines 24-25; part of verification process-column 7, lines 31-41; column 12, lines 19-23) wherein generating an early warning (part of verification process-column 7, lines 31-41) further includes deriving the variance deriving the variances of the plurality of residuals, predicted by said predicting; estimating the probabilities for threshold (column 12, lines 19-23) violation of the variable with respect to said threshold (column 12, lines 19-23) at the corresponding different time reference points in the future; and issuing an early warning (part of verification process-column 7, lines 31-41) for any of the time reference points at which the probability for threshold (column 12, lines 19-23) violation of the variable exceeds a pre-determined value.

Claim 10. The medium according to claim 9, (column 1, lines 24-25; part of verification process-column 7, lines 31-41; column 12, lines 19-23) wherein the estimated the probabilities comprises: deriving a residual threshold (column 12, lines 19-23) corresponding to the residual of the variable; and calculating the probabilities for threshold (column 12, lines 19-23) violation of the residual with respect to the residual threshold (column 12, lines 19-23) at the corresponding different time reference points in the future.

Claim 11. The system as claimed in claim 1, (column 2, lines 15-19; column 9, lines 47-54; column 8, lines 25-30; column 13, lines 1-7) wherein the threshold (column 12, lines

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19-23) corresponding to future times are distinct based on time of day and day of week (figure 6 with column 8, lines 23-45).

Claim 12. The system as claimed in claim 1, (column 2, lines 15-19; column 9, lines 47-54; column 8, lines 25-30; column 13, lines 1-7) wherein the threshold (column 12, lines 19-23) wherein the detection of abnormal behavior (example- column 7, lines 46-49) is further based on criteria derived from a business process model.

Claim 13. The system as claimed in claim 2, (column 2, lines 15-19; column 9, lines 47-54; column 8, lines 25-30; column 13, lines 1-7; figure 6 with column 8, lines 23-45) wherein the online behavior modeling mechanism includes a sliding window.

Claim 14. The system as claimed in claim 13, (column 2, lines 15-19; column 9, lines 47-54; column 8, lines 25-30; column 13, lines 1-7; figure 6 with column 8, lines 23-45) wherein the width of the sliding window is configurable parameter (claim interpretation with column 3, lines 25-37).

Claim 15. The system as claimed in claim 13, (column 2, lines 15-19; column 9, lines 47-54; column 8, lines 25-30; column 13, lines 1-7; figure 6 with column 8, lines 23-45) wherein the width of the sliding window (claim interpretation with column 3, lines 25-37) is configurable parameter (column 12, lines 45-58).

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Claim 17. The method as claimed in claim 3, (title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein detecting abnormal behavior (example- column 7, lines 46-49) of the variable is further according to criteria derived from a business process model.

Claim 18. The method as claimed in claim 5, (title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein the residuals corresponding to different time points in the future comprise a distinct value depending on the time of day, day of week, and week of month of the future time (figure 6 with column 8, lines 23-45).

Claim 19. The method as claimed in claim 5, (title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein the number of time reference points and the pre-determined threshold (column 12, lines 19-23) violation value are configurable parameters.

Claim 20. The method as claimed in claim 5, (title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein the number of time reference points and the pre-determined threshold (column 12, lines 19-23) violation value are derived from a business process model.

Claim 21. The computer-readable medium as claimed in claim 7, (column 1, lines 24-25; part of verification process-column 7, lines 31-41; column 12, lines 19-23) wherein the threshold (column 12, lines 19-23) is further based on criteria derived from a business process model.

Claim 22. The computer-readable medium as claimed in claim 7, (column 1, lines 24-25; part of verification process-column 7, lines 31-41; column 12, lines 19-23) wherein the threshold (column 12, lines 19-23) is a distinct value based on time of day and day of week.

Claim 24. The computer-readable medium as claim in claim 8, (column 1, lines 24-25; part of verification process-column 7, lines 31-41; column 12, lines 19-23; column 2, lines 15-19) wherein modeling of the behavior of the variable includes the use of sliding window (claim interpretation with column 3, lines 25-37).

Claim Rejections - 35 USC § 103

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 16 and 23 are rejected under 35 U.S.C. 103 (a) as obvious by Reed (U. S. Patent 6,850,988 (2005)), in view of Friedrich et al., ("Stochastic Resource Prediction and Admission for Interactive Sessions on Multimedia Servers" (1999)). Reed teaches a system and method for dynamically evaluating an electronic commerce business model through click stream analysis (abstract); but doesn't teach stochastic probability. Friedrich et al. teaches session-based multimedia control strategies to guarantee QoS for client sessions as a whole (abstract).

At the time of invention, it would have been obvious to one of ordinary skill in the art to modify Reed by way of Friedrich et al. to anticipate irregular and varying resource demands which result from interactive user behavior (Friedrich: abstract).

Claim 16. The method as claimed in claim 3, (Reed: title and abstract; column 2, lines 15-19; column 13, lines 12-17; column 8, lines 25-45; column 8, lines 32-45) wherein the modeling of the behavior of the variable includes detecting time segments (Friedrich:

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pg. 11, section 3.3, 1st and 2nd paragraphs) in which the variable includes stochastically (Friedrich: pg. 10, section 3.2, lines 1-4) stationary behavior.

Claim 23. The computer-readable medium as claimed in claim 8, (column 1, lines 24-25; part of verification process-column 7, lines 31-41; column 12, lines 19-23; column 2, lines 15-19) wherein the modeling of the behavior of the variable includes detecting time segments (Friedrich: pg. 11, section 3.3, 1st and 2nd paragraphs) in which the variable includes stochastically (Friedrich: pg. 10, section 3.2, lines 1-4) behavior the time segments.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

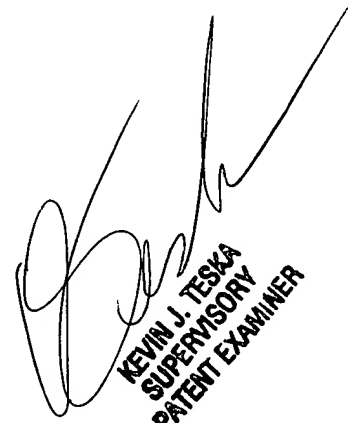
Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm) or contact Supervisor Mr. Kevin Teska at (571) 272-3716. Fax number is 571-273-3715.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

May 17, 2005

THS



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER